

spatially variable saturation index

Posted by adehoccs - 2008/09/29 12:07

Hello! I am trying to calibrate ks, n, G of my 8 ha basin using PEST. I have successfully calibrated four rainfall events, but the results are not satisfactory, and I think this is partly because of the high dependence of simulated outflow on saturation index. I have enough field data for calculating the saturation index for each event, but I think I should include spatial variation of the parameter for accuracy. I have had a look on the manual but I am under the impression that if I take into account several precipitation files with different saturation index, the simulation will be carried out based on a weighed average of s.i., is that right? Is there any way of including this spatial variability?

Thanks a lot in advance.

Ana

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Re:spatially variable saturation index

Posted by adehoccs - 2008/10/01 12:02

Hello again! I have finally found the way of including spatial variation of saturation index in my simulation as referred in the manual, page 53. However, I don't understand the process of rainfall input file generation based on multiple rainfall inputs. As I only have one gage data but I want S.I. to vary spatially, I have taken into account six gages with the same rainfall data, so I can modify the S.I. manually in the pre file. Surprisingly, I have imported the table of my 700 min (from 5:18 to 16:58 of the same day) 11.5 mm event and after running the rainfall data generator, I have got three different .pre files, and the time of the event has been doubled! Could you please help me? I enclose the .pre files and rainfall data.

Thanks a lot for your help. Kind regards,

Ana

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Re:spatially variable saturation index

Posted by adehoccs - 2008/10/01 12:05

Sorry, but I am not allowed to enclose my .zip, could you please tell me an email address so I can send it to you?

Thanks a lot again,

Ana

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Re:spatially variable saturation index

Posted by lainie - 2008/10/02 21:46

Hi,

It's best if you send your files through this forum. Can you try to send them again, please, and make sure they are zip files, less than 1000 kb.

Thanks.
Lainie

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Re:spatially variable saturation index

Posted by adehocos - 2008/10/03 07:56

I'll try again; I think it is a problem with winrar files so I will enclose them separately. .

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Re:spatially variable saturation index

Posted by adehocos - 2008/10/03 11:03

http://www.tucson.ars.ag.gov/agwa/images/fbfiles/files/55_estaciones.zip
Here it is, I hope!

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Re:spatially variable saturation index

Posted by lainie - 2008/10/03 17:19

Hi,

Sorry, but I'm not able to open your zip file. Was it created with a zip program, like winzip?

Lainie

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Re:spatially variable saturation index

Posted by adehocos - 2008/10/06 08:37

It was created with winrar, and I had to change the extension manually in order to enclose it to the forum...

I have just tried and I can open it.

Ana

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Re:spatially variable saturation index

Posted by lainie - 2008/10/07 22:59

Thanks, I was able to open your files and look at them. I'm not sure how you generated the .pre file with the .txt file you sent, but the usual way to generate a multiple gage precipitation file in KINEROS is as follows:

You must first create an excel file with the precipitation info as shown in the manual that includes fields for gage id, elapsed time, depth, hour, minute, year, month and day. Save this file as a .dbf. You must also have a raingage point theme that has the same gage id's as in the precipitation .dbf file. These files are used to generate the KINEROS .pre file.

Since you already have a correctly formatted KINEROS precip file with six rain gages (2007_2_22_3.pre), you can simply replace the incorrect time-depth pairs with your correct values from your raingage point theme. Be sure to also change the number of pairs to 15 (n=15). Then you can revise the saturation index (SA) for each gage.

Alternatively, you may get better results by adding the initial soil saturation value for each plane element to the parameter file. To do this, manually add "SA = xx" anywhere within the group of parameters for each plane, for example, after the PAVE value.

Lainie

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Re:spatially variable saturation index

Posted by adehoc - 2008/10/08 07:53

Thanks a lot! I am sure this information will help me quite a lot...

Ana

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